Nathan Schumaker <[redacted]>

HexSim stepwise process

3 messages

Brendan_White@fws.gov <Brendan_White@fws.gov> **Tue, May 11, 2010 at 4:17 PM**
To: "Bruce G. Marcot" <brucem@spiritone.com>
Cc: Nathan Schumaker <[redacted]>

Bruce and Nathan -

During a phone call last week with BLM I was asked to prepare an outline of all the steps necessary to run the HexSim model, including when the steps would occur, how long I thought the steps would take, who's responsible for which part of each step, etc. I've put together a draft of that outline, but it's really not worth sending out until you two look it over and edit it. Here it is. I'd sure appreciate any feedback you have (preferably in Track Changes). If there are aspects besides those I've captured (Start Date, Time Frame, etc.) that you think is important or useful, please let me know.

The goal here is to provide an outline the BLM (and everyone else, for that matter) can work from to plan staff effort, computer resources, etc. Please let me know if you have any questions.

(See attached file: HexSimStepWiseProcess.doc)

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(503)231-6179

HexSimStepWiseProcess.doc
34K

Bruce G. Marcot <brucem@spiritone.com> **Tue, May 11, 2010 at 7:47 PM**
To: Brendan_White@fws.gov
Cc: Nathan Schumaker <[redacted]>

Hi Brendan,

Thanks for your email and effort to work up this HexSim process list.

I guess I need to confer a bit with Nathan on some of these items, and maybe you and I (we, with Nathan) should briefly review.

E.g.:

Item 3, Incorporate MaxEnt products into HexSim, isn't just a one-step process. I cc'd you and others on a suggested procedure I sent to Nathan, regarding how to interpret MaxEnt maps in terms of NSO locations. Also, since I haven't seen any MaxEnt maps yet, I really don't know what they will consist of. We'll need to develop the procedure for converting MaxEnt maps into HexSim hexagon maps (this might be straight forward, but again, I need to confer with Nathan on this). And then interpret those HexSim maps in terms of resource levels (habitat values) pertinent to NSO territories.

For Item 4, Zonation maps, I've traded several emails today with Jeff Dunk on possible ways to do the Zonation modeling.

Then, for Item 5, you don't just drop the Zonation maps into HexSim. You (as in "FWS") have to decide what the "scenarios" are, that is, what happens inside and outside the various Zonation boundaries, and how to project them into some future condition. HexSim doesn't do this; HexSim isn't a stand projection model or management outcome model. I'd suggest that this key decision is up to FWS, not "Craig and Nathan," as you wrote. And this is far more than just "a day or less."

Do we need to discuss? I'm around this week and next.

No worries, this is all coming together ... but just that some of the steps aren't as 1,2,3 as you denote. There will be some discussion, iteration, and decisions needed by FWS.

- bruce

[Quoted text hidden]

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Bruce G. Marcot, Ph.D. Research Wildlife Ecologist
brucem@SpiritOne.com
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Ecology Picture of the Week:
http://www.taos-telecommunity.org/epow/
The Plexus -- Where Disciplines Collide:
http://www.spiritone.com/~brucem
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** personal correspondence **

Nathan Schumaker <[redacted]> **Wed, May 12, 2010 at 1:03 PM**
To: "Bruce G. Marcot" <brucem@spiritone.com>
Cc: Brendan_White@fws.gov

Hi Brendan, Bruce

I'm attaching a quickly-edited version of your document. I just read Bruce's comments -- after making the edits. I do agree with his caveats, and echoed them to some extent (though not as thoroughly).

I'm around and will keep focusing on the basic owl scenario for now...

Nathan

[Quoted text hidden]

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Nathan Schumaker
[redacted]
(541) 754-4658

NHS Edits to (HexSimStepWiseProcess).doc
36K

DRAFT HexSim Modeling Steps May 11, 2010

The goal of this write-up is to outline the steps necessary to complete the cooperative HexSim Modeling process, including details on the estimated time for each step, the people responsible for each step, the necessary inputs, the anticipated outputs, and the resources needed. While presented as a sequence of steps, a great deal of stage overlap is expected.

1. Parameterize the HexSim Model
Start Date: On-going
Description: Provide values for those parameters necessary for the model to be run as accurately as possible – In process; hopefully complete within 2.5 weeks (barred owl parameters may come later per our discussion on 4/29/2010)
Responsible parties: See Below

Parameters still needing values include:

a. Mean annual home range sizes by region (Brendan)
b. Vital rates by region (Eric [or Nathan and Bob?])
c. Barred owl stressor influences (Eric)
d. Percentage of HR overlap (Brendan)
e. Clutch Size reconfirmation (eggs vs. female eggs) with Bob A. (Nathan)

2. Continue to Learn the Model
Start Date: ASAP
Description: Nathan and Craig sit at computer in Nathan's office and train Craig on the model. This can happen prior to full parameterization on a non-spotted owl data set/map product. After first session Nathan will need to determine whether additional face to face sessions are needed.
Responsible Parties: Craig to set-up appointment with Nathan ASAP
Timeframe: On-going process. Should be "fluent" by second week in June.

3. Incorporate MaxEnt products into HexSim
Start Date: As soon as maps are complete – by week of May 17th
Description: MaxEnt predictive occupancy maps will be loaded into HexSim as the base layer for the modeling runs.
Responsible Parties: Craig with technical assistance from Nathan
Timeframe: Several hours, pending readiness of maps (true?)

4. Preparation of Network Scenarios in Zonation
Start Date: On-going; completed by June 4th.
Sources: 1) Zonation, 2) Existing Networks, 3) BLM-derived

1) Zonation – Generated under the direction of Jeff Dunk and Brian Woodbridge
2) Existing – Will be entered into Zonation by Jeff Dunk and Brian Woodbridge

Comment [NS1]: We'll have a better scenario in 2 5 weeks, but I don't think we'll have a finished version Its going to be iterative, and doesn't need to be final until we are ready to go into production

Comment [NS2]: A more exhaustive list is what we've been passing back and forth lately in email

Comment [NS3]: Yes, if the maps are OK, and we know how to assign weights that indicate habitat value But we are talking about modifying these maps to capture the longitudinal differences in resource quality This may be a separate step Since this will be the first time we run HexSim on the whole range, there may be some issues that crop up

3) BLM-derived – Shape file needed from BLM; coordinate ASAP with Brian Woodbridge on format, file transfer, etc.

Description: Zonation inputs will be analyzed by the model and presented to FWS along with the Zonation relative assessments. FWS is responsible for which Zonation scenarios are then analyzed in HexSim. This decision should be made by June 9.
Responsible Parties: Brian Woodbridge and Jeff Dunk are responsible for the Zonation analysis. Advice may be sought from either the MAG or FWS regarding inputs, outputs or analysis.

5. Network Scenario input to HexSim

Start Date: June 7th
Description: A subset of the completed Zonation outputs will be input into HexSim for modeling. The number of network scenarios is likely to range from 10 to 25 and will be determined by the FWS, as advised by the MAG, Bruce and Nathan.
Responsible Parties: Craig will input the network scenarios with assistance from Nathan.
Timeframe: This step should take a day or less

Comment [NS4]: Yes, assuming that we can crosswalk between the MaxEnt and Zonation habitat weighting schemes Otherwise, it may take a little longer

6. Execute the HexSim Model Runs for each Network Scenario

Start Date: Mid to late June (when parameters, base layer and network scenarios have been input in HexSim).
Description: The range-wide spotted owl population will be modeled for each reserve scenario on BLM computers. Numerous scenarios can be modeled at the same time depending on the technological capabilities of the network in use. For each network scenario the specific settings/parameters will need to be noted and replicated for other network scenario runs to provide a valid comparison tool. Updates of model runs initiated will be sent to Nathan and Bruce.
Responsible Parties: Craig will manage and initiate the model runs with technical assistance from Nathan and Bruce. Nathan and Bruce will provide Craig with a methodology for tracking the details of each model run for the admin record.
Timeframe: 1 – 2 months
Tech Requirements: 150 megs of computer space. Nathan will provide an efficient protocol for zipping results files to save on space.

7. Generation of HexSim Post-Simulation ~~Outputs~~Products

Start Date: At completion of step 6; likely in early to mid-August
Description: The modeling runs will culminate with output files that can be summarized and manipulated to construct graphs, tables, records and animations to display the relative results of each modeled scenario. A wide variety of results are available which can be produced at the end of the modeling runs. Potential results do not need to be determined ahead of time (true?).
Responsible Parties: Craig will generate the outputs in consultation with Nathan, Bruce and FWS.
Timeframe: 1-2 weeks.

Comment [NS5]: Inbetween steps 6 and 7, we'll want to develop a list of the exact post-simulation products we want to use in the analysis This is not a difficult process, but its one that we'll want maximum feedback on Craig's time will be most efficiently used if we don't have to go back and re-compute these things later

Comment [NS6]: Correct

8. Review of HexSim Modeling Results
Start Date: Upon receival of the HexSim outputs
Description: The outputs of each HexSim modeling run will be reviewed to ensure that the results are consistent with the intended model parameters and assumptions. This step will also be used to interpret the results of each modeling run for explanation to the FWS.
Responsible Parties: Bruce and Nathan.
Timeframe: 3-4 days as results become available

Comment [NS7]: I think we will want 5 days minimum for this process

9. Re-run portions of the HexSim results to test specific aspects or questions.
Start Date: Upon review of the results and after consultation with FWS.
Description: The modeling results will provide an opportunity to test stressors, assumptions or questions that may not be apparent at this time. This could be done in fairly short-order given all the parameters are in place and it's a matter of tweaking parameter values or adding in a stressor (turning it on or off, etc.). This step may be applied to all or a subset of the modeling runs.
Responsible Parties: Craig, Bruce and Nathan.
Timeframe: 1-2 days per network scenario as results become available.

Comment [NS8]: Its rarely this streamlined in practice Lets shoot for this, but prepare ourselves for a longer process The time available will dictate how many alternative parameter sets we explore, not visa-versa

Comment [NS9]: This is within the realm of possibilities, but it could take longer

10. Presentation of Results to FWS
Start Date: Upon completion, interpretation and organization of step 9, likely early September.
Description: The modeling results will be presented to FWS managers (Henson et al.) and invited attendees. Presentation will be geared towards providing enough information for FWS to discriminate the value of each network scenario to spotted owl recovery.
Responsible Parties: Bruce, Nathan and Craig.
Timeframe: 1 day of preparation time per network scenario as results become available.

11. Preparation of HexSim modeling process for publication
So, my assumption is that this is outside the scope of the work for the Recovery Plan, but part of everyone's interest who is involved in this process. I thought I'd include it here to be sure everyone has the same ideas regarding this stage.
Responsible Parties: Bruce, Nathan, Craig and Brendan (Others [Eric, Bob, Katie]? Do I get to join in?).
Timeframe: After all the work for the Recovery Plan is completed, although the work for the Recovery Plan is part of the preparation for publication.

Comment [NS10]: Of course, and as you are committed to producing only the best quality products, I'll assume we'll initiate this phase with an all expenses paid workshop on Maui